

## **Two New Species of the Genus *Burmoniscus* (Isopoda, Oniscidea, Philosciidae) from Ko Samui and Ko Pha Ngan, Thailand**

**Dae Soo Jeon and Do Heon Kwon\***

(Department of Biology, Inje University, Kimhae 621-749, Korea)

### **ABSTRACT**

Two new species of the genus *Burmoniscus*, *B. siamenis* and *B. phanganensis*, are described from Ko Samui and Ko Pha Ngan, Thailand. *B. siamenis* is similar to *B. mauritiensis* (Taiti and Ferrara, 1983) in color pattern and the shape of telson, but distinguished by the shape of pereonite 7 with obtuse postero-lateral angle and the peculiar shape of male pleopod 2 endopod with truncated apex. *B. phanganensis* is close to *B. ocellatus* (Verhoeff, 1928) in the shape of pereonite 7 and telson, but easily distinguished by the peculiar shape of male pleopod 1 endopod with two rows of denticles on caudal surface.

Key words: Crustacea, Oniscidea, Philosciidae, *Burmoniscus*, new species, Thailand

### **INTRODUCTION**

The genus *Burmoniscus* Collinge, 1914 belongs to family Philosciidae and it includes over 50 species which are distributed mainly in tropical areas of the Oriental Region.

Thailand is one of the regions that have had very little attention in the field of terrestrial Isopoda. Among the species in the genus *Burmoniscus*, only one species, *B. orientalis* Green, Ferrara & Taiti, 1990, has been previously recorded from Thailand (Green *et al.*, 1990). We found two new species of *Burmoniscus* from Ko Samui and Ko Pha Ngan located in the Gulf of Thailand. They are described with illustrations of diagnostic characters.

---

\* Corresponding author: Do Heon Kwon

E-mail: biodhkwo@ijnc.inje.ac.kr, Tel: 055-320-3263

The specimens examined are deposited in the Museo Zoologico "La Specola" dell' Università, Firenze (MZUF) and the Department of Biology, Inje University, Kimhae (IJB).

## SYSTEMATIC ACCOUNT

### Genus *Burmoniscus* Collinge, 1914

*Burmoniscus* Collinge, 1914: 466.

*Formososcia* Verhoeff, 1928: 218.

*Rennelloscia* Vandel, 1970: 143.

*Vavoscia* Schultz, 1985: 216.

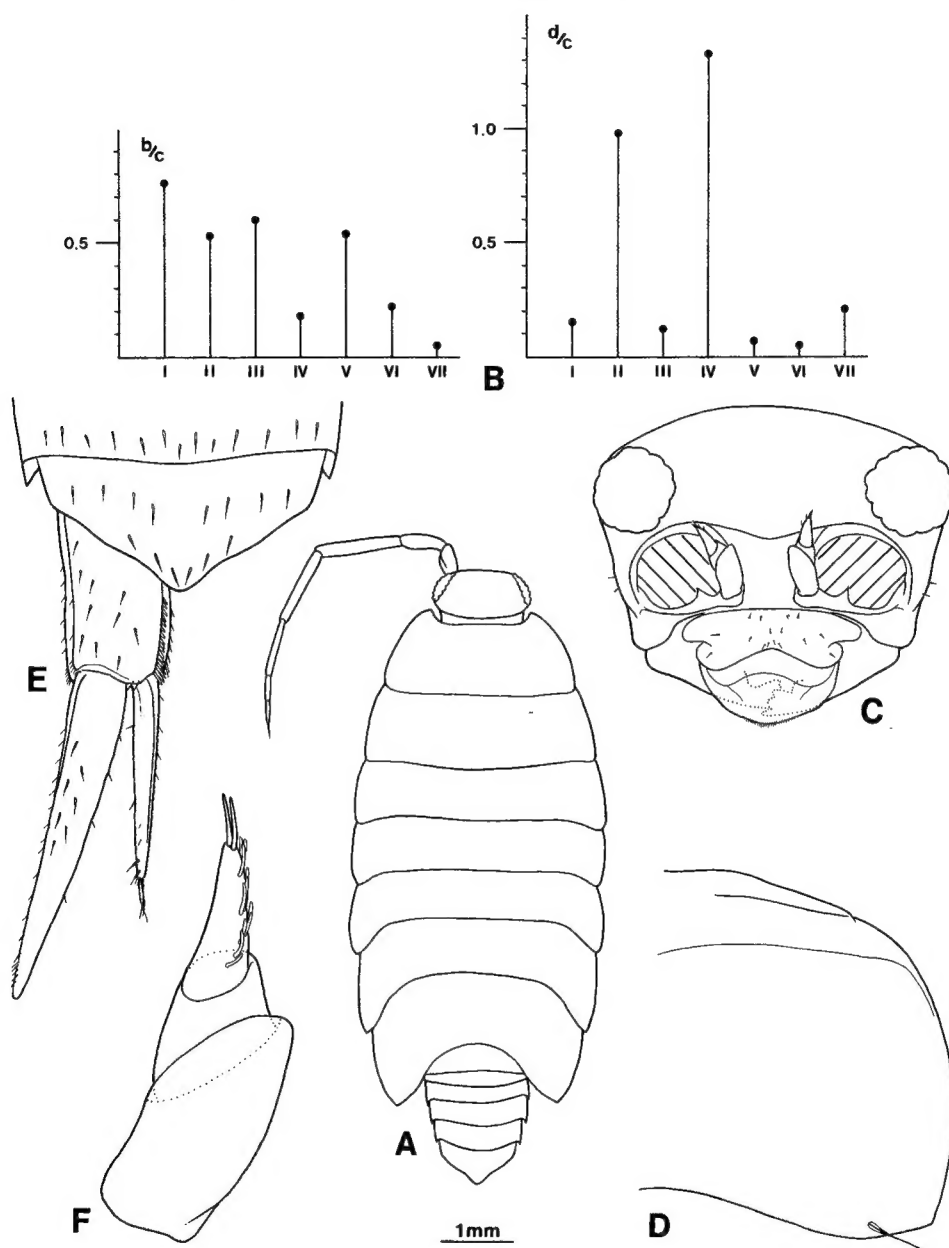
**Type species.** *Burmoniscus moulmeinensis* Collinge, 1914 (= *Philoscia coeca* Budde-Lund, 1895) by original monotypy.

### *Burmoniscus siamenis* n. sp. (Figs. 1-3)

**Material examined.** Holotype: ♂, body length 7.6 mm, Surat Thani, Ko Samui, nr Hin Lat waterfall, 20 Jun. 1993, leg. D.H. Kwon (MZUF). Paratypes: 4 ♂♂, 9 ♀♀, same data as holotype (MZUF); 5 ♂♂, 8 ♀♀, same data (IJB).

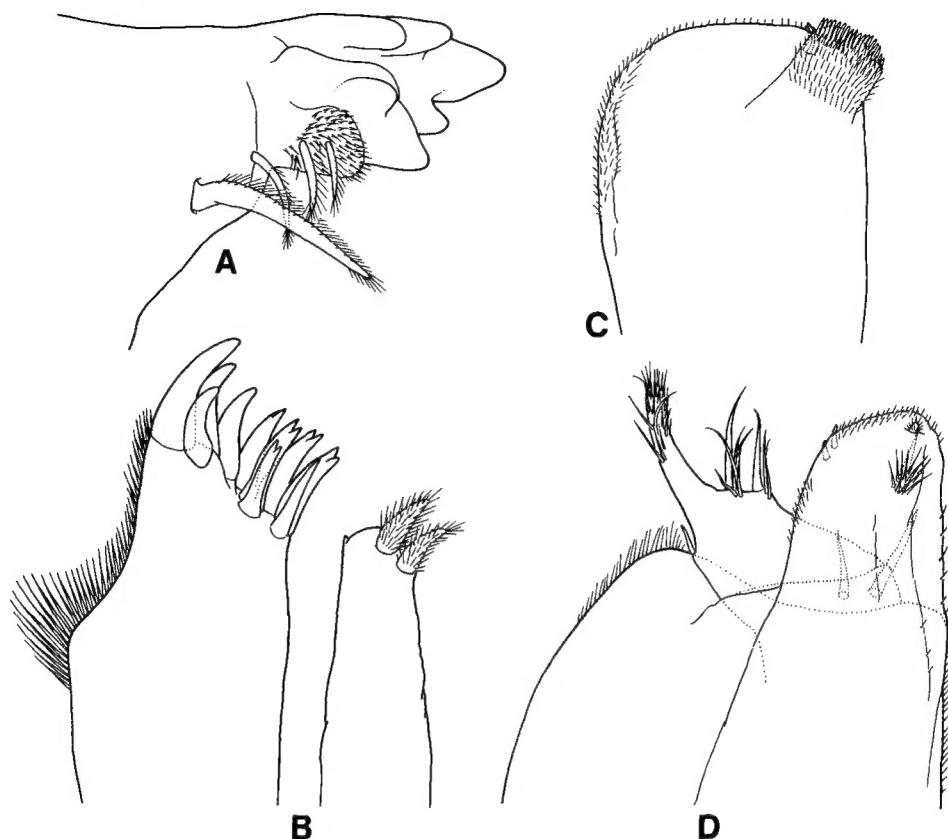
**Additional materials examined.** 52 ♂♂, 59 ♀♀, Surat Thani, Ko Samui, Ban Turian, Na Muang waterfall, 31 Jan. 1998, leg. D.H. Kwon & D.S. Jeon (IJB); 18 ♂♂, 25 ♀♀, Surat Thani, Ko Pha Ngan, Ban Madua Wan, Phang waterfall, 2 Feb. 1998, leg. D.H. Kwon & D.S. Jeon (MZUF); 9 ♂♂, 10 ♀♀, Surat Thani, Ko Pha Ngan, Chalok Lum, 2 Feb. 1998, leg. D.H. Kwon & D.S. Jeon (IJB).

**Description.** Maximum length of male 7.6 mm, of female 9.5 mm. Body outline as in Fig. 1A. Color in alcohol dark brown with scattered small pale spots; midline of pereon darker with a large oval pale spot on posterior part of each pereonite; pereonal epimera darker with a large irregular pale spot at base; antero-lateral corners of pereonites 2-7 with a transverse pale spot connected to antero-lateral margin, mostly hidden by preceding pereonite; postero-lateral parts of pereonal epimera 1-4 pale; postero-lateral corners of pereonites 5-7 yellowish brown; pleon with a narrow pale stripe on midline and darker lateral parts; antenna with peduncular articles 1, 2 and proximal part of 3-5 pigmentless; uropodal exopod with a transverse pale stripe in middle. Dorsum smooth; a few specimens with sparse upright setae. A few gland pores near antero-lateral corners of pereonites 1 and 2; about 10 along lateral margins of 3-5; absent at 6 and 7. Each pereonites with a nodule lateralis per side; noduli laterales on pereonites 2 and 4 much farther from lateral margins than ones on the other pereonites. Eye with 23-25 ommatidia. Cephalon with supra-antennal line bent down in middle; frontal line absent. Pereonite 7 epimeron with obtuse postero-lateral angle and almost straight posterior margin. Pleonal epimera reduced with posterior points on pleonites 3-5 visible in dorsal view. Telson with slightly sinuous sides and triangular apex. Antennule three-articulated with third article bearing 3 rows of aesthetascs at inner surface and 2 ones at apex. Antenna with fifth article of peduncle as long as flagellum; flagellum three-articulated with second and third articles bearing 3 and 2 aesthetascs respectively; ratio of flagellar articles 2 : 1 : 1. Mandible with a molar penicil consisting of a single plumose seta; right mandible with 2



**Fig. 1.** *Burmoniscus siamensis*, n. sp.: A, habitus, paratype female; B, co-ordinates of noduli laterales ( $b$ , distance of the nodulus lateralis from the posterior margin of the pereonite;  $c$ , length of the pereonite;  $d$ , distance of the nodulus lateralis from the lateral margin of the pereonite); C, cephalon, frontal view; D, right epimeron of pereonite 7; E, pleonite 5, telson and left uropod; F, antennule.

penicils and left one with 3 between molar penicil and incisor process. Maxillule with exopod bearing 4+6 (5 cleft) teeth on distal margin; endopod bearing 2 unequal penicils and a minute



**Fig. 2.** *Burmoniscus siamensis*, n. sp., buccal pieces: A, left mandible; B, maxillule; C, maxilla; D, maxilliped.

outerdistal point. Maxilla two-lobed, with outer lobe bearing numerous marginal setae and 3 stout setae bent outwards at inner-distal part of caudal surface; inner lobe much smaller than outer one, covered with dense setae, stouter on distal margin. Maxillipedal endite with a penicil near distal margin; palp reduced, two-segmented with distal segment bearing distal part much slenderer than proximal one. Uropodal protopod grooved on outer margin; insertion of exopod and endopod at same level; exopod about 1.7 times as long as endopod.

**Male.** Smaller than female. Pereopods without sexual modification. Pleopod 1 exopod with subacute apex and 1-2 indentations on concave outer margin; endopod with distal part almost straight and stout. Pleopod 2 exopod slightly wider than long, with concave outer margin; endopod twice as long as exopod, with truncated apex. Pleopod 5 exopod as in Fig. 3E.

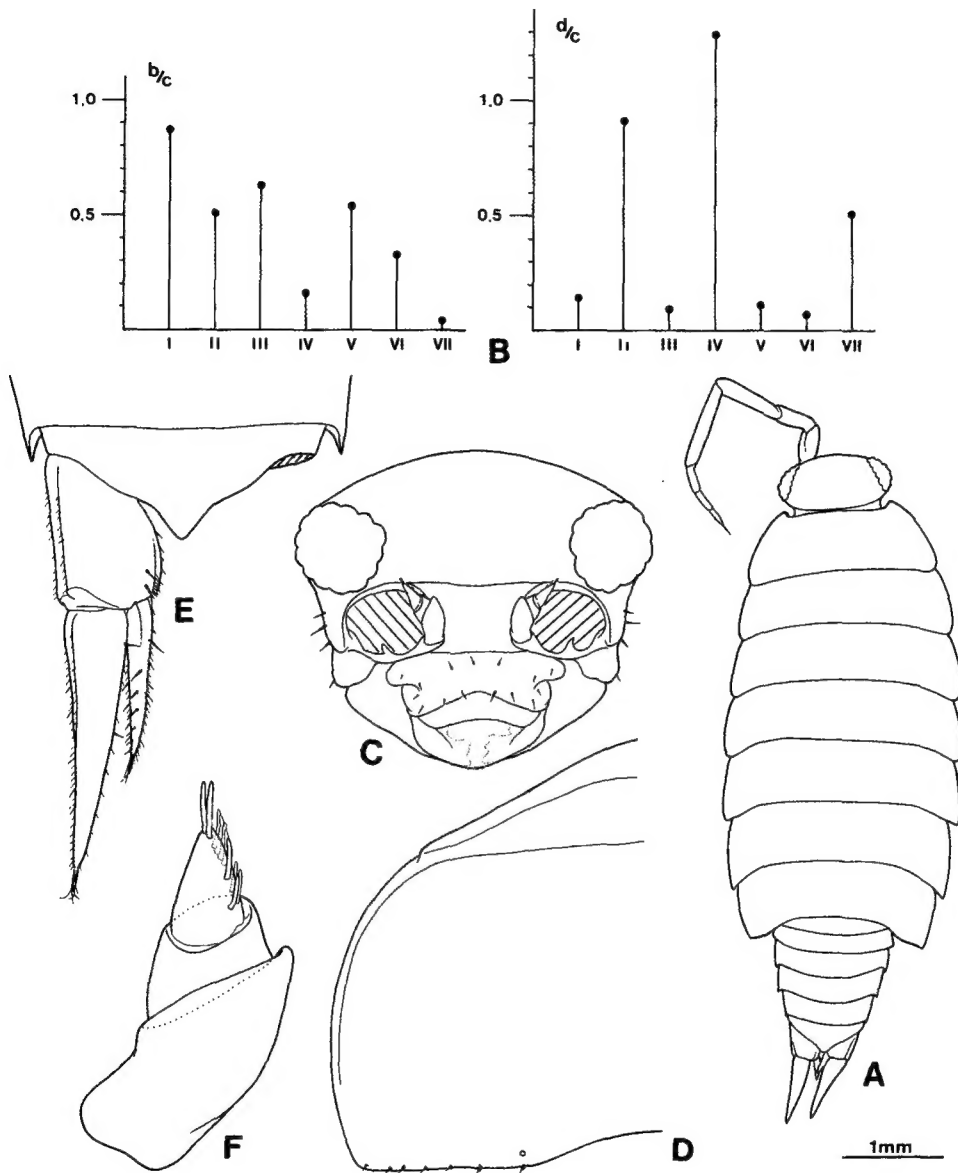
**Etymology.** The name refers to Siam, the former name of Thailand.

**Remarks.** In color pattern and the shape of telson, *Burmoniscus siamensis*, n. sp. is similar to *B. mauritiensis* (Taiti and Ferrara, 1983) from Mauritius, southern China, Taiwan, Korea and Hawaiian Islands. But base of pereonal epimera and mesial parts of pereonites of this new species are less dark, a pale spot on base of its pereonal epimeron is larger and pale spots scattered on its dorsum are smaller than those of *B. mauritiensis*. Its uropodal exopod bears a transverse pale



**Fig. 3.** *Burmoniscus siamensis*, n. sp., male: A, pereopod 1; B, pereopod 7 basis, ischium, merus and carpus; C, pleopod 1; D, pleopod 2; E, pleopod 5 exopod.

stripe which is absent at that of *B. mauritiensis*. It differs from *B. mauritiensis* also in the postero-lateral angle of pereonite 7 (obtuse instead of subacute). The typical structure of male pleopod 2 endopod with truncated apex is the characteristic which distinguishes it from all the other species in the genus.

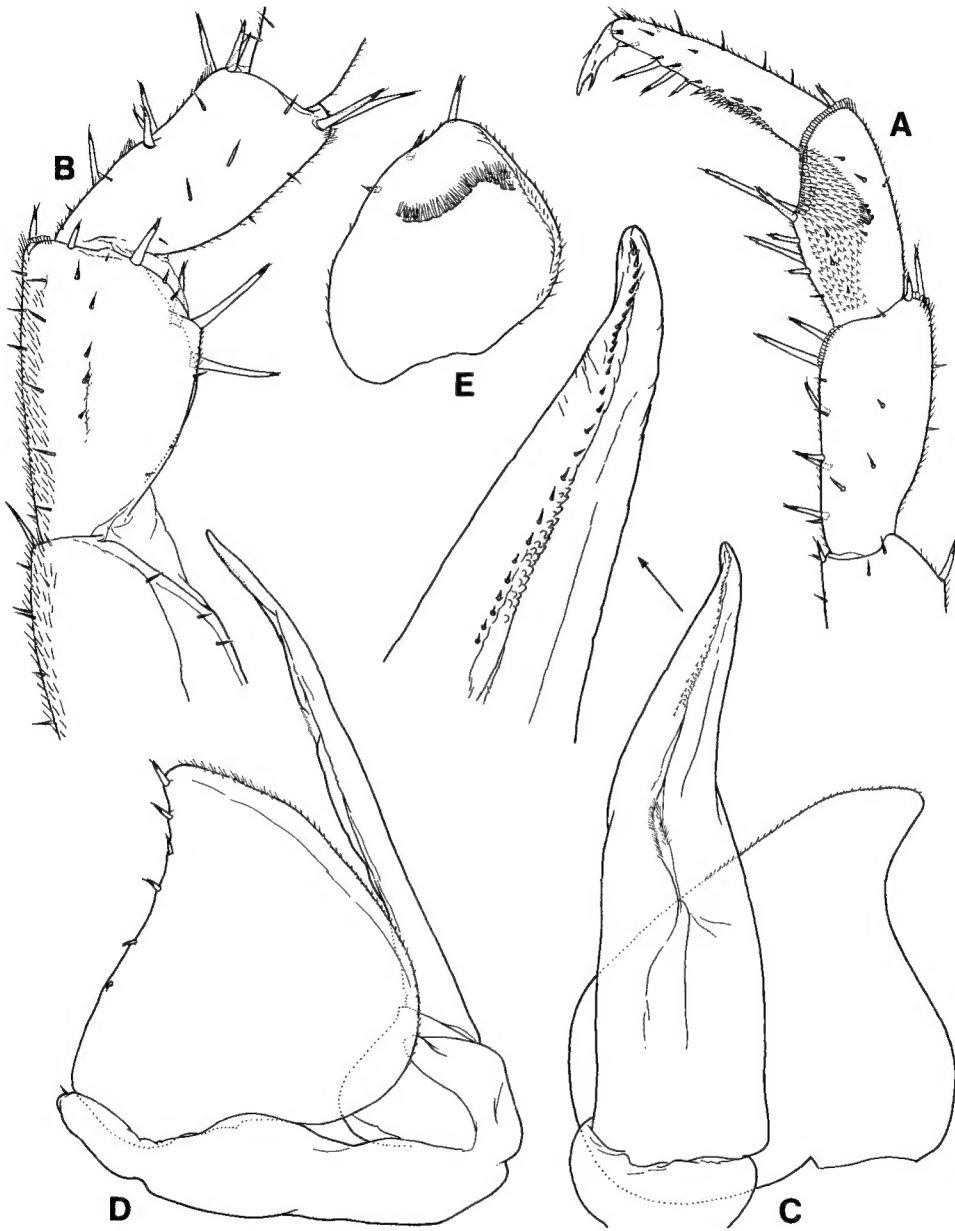


**Fig. 4.** *Burmoniscus phanganensis*, n. sp.: A, habitus, paratype male; B, co-ordinates of noduli laterales (b, c and d as in Fig. 1B); C, cephalon, frontal view; D, left epimeron of pereonite 7; E, pleonite 5, telson and left uropod; F, antennule.

***Burmoniscus phanganensis* n. sp. (Figs. 4, 5)**

**Material examined.** Holotype: ♂, body length 5.9 mm, Surat Thani, Ko Pha Ngan, 3 km east of Thong Sala, 20 Jun. 1993, leg. D.H. Kwon (MZUF). Paratypes: 3 ♂♂, 6 ♀♀, same data as holotype (MZUF); 4 ♂♂, 5 ♀♀, 1 juv., same data (IJB).

**Additional materials examined.** 3 ♂♂, 4 ♀♀, 1 juv., Surat Thani, Ko Pha Ngan. Ao Nai



**Fig. 5.** *Burmoniscus phanganensis*, n. sp., male: A, pereopod 1; B, pereopod 7 basis, ischium, merus and carpus; C, pleopod 1; D, pleopod 2; E, pleopod 5 exopod.

Wok, 19 Jun. 1993, leg. D.H. Kwon (LJB).

**Description.** Maximum length of male 5.9 mm, of female 7.3 mm. Body outline as in Fig. 4A. Color in alcohol brown with usual pale muscle spots; base of pereonatal epimera with a longitudinally elongated pigmentless spot, sides of which almost parallel to each other, enclosed by blackish

brown border; postero-lateral corners of pereonites 5-7 yellowish brown; pleon with a narrow pale stripe on midline. Dorsum smooth. About 15 gland pores along lateral margins of pereonites 3-6; absent at 1, 2 and 7. Each pereonites with a nodulus lateralis per side; noduli laterales on pereonites 2, 4 and 7 much farther from lateral margins than ones on the other pereonites. Eye with 23-24 ommatidia. Cephalon with supra-antennal line slightly bent down in middle; frontal line absent; profrons slightly protruding frontwards. Pereonite 7 epimeron with obtuse postero-lateral angle and slightly concave posterior margin. Pleonal epimera reduced with posterior points on pleonites 3-5 visible in dorsal view. Telson with convex sides and well developed triangular apex. Antennule three-articulated with third article bearing 2 rows of aesthetascs at inner surface and 2 ones at apex. Antenna with fifth article of peduncle as long as flagellum; flagellum three-articulated with second and third articles each bearing 2 aesthetascs; ratio of flagellar articles 5 : 3 : 3. Buccal pieces as in *B. siamensis*. Uropodal protopod grooved on outer margin; insertion of exopod and endopod at same level; exopod about 1.7 times as long as endopod.

**Male.** Smaller than female. Pereopod 1 without sexual modification. Pereopod 7 ischium with thick sternal margin covered with dense setae and a weak depression on rostral surface. Pleopod 1 exopod with triangular posterior point bent outwards and rounded apex; endopod with apical part bent inwards and caudal surface bearing two rows of denticles along midline. Pleopod 2 exopod longer than wide; endopod about 1.8 times as long as exopod. Pleopod 5 exopod as in Fig. 5E.

**Etymology.** The name refers to Ko Pha Ngan where the specimens have been collected.

**Remarks.** In the shape of pereonite 7 and telson, *Burmoniscus phanganensis*, n. sp. is very similar to *B. ocellatus* (Verhoeff, 1928) from southern China, Taiwan and Japan. This new species is easily distinguished from *B. ocellatus* and the others presently included in the genus by the blackish brown border which contrasts well with the brown color of the body enclosing the elongated pale spot on the base of each pereonal epimera. It can be recognized also by the peculiar shape of male pleopod 1 endopod with two rows of denticles on caudal surface.

## ACKNOWLEDGMENTS

The authors wish to acknowledge the financial support of the Korean Research Foundation made in the program year of 1997.

## REFERENCES

- Budde-Lund, G., 1895. Viaggio di Leonardo Fea in Birmania e regioni vicine. LXIV. Isopodi terrestri. Annali Mus. civ. Stor. nat. Giacomo Doria (2), **14**(1894): 602-612.
- Collinge, W. E., 1914. Zoological results of the Abor Expedition, 1911-1912. Terrestrial Isopoda. Rec. Indian Mus., **8**(6): 465-469.
- Green, A. J. A., F. Ferrara and S. Taiti, 1990. Terrestrial Isopoda from the Krakatau Islands, South Sumatra and West Java. Mem. Mus. Vic., **50**(2): 417-436.
- Schultz, G. A., 1985. Three terrestrial isopod crustaceans from Java, Indonesia (Oniscoidea, Philosciidae). J.



Nat. Hist., **19**: 215-223.

Vandel, A., 1970. Les Isopodes terrestres des îles Rennell et Bellona. In: T. Wolff, Ed., The natural history of Rennell Island, British Solomon Islands, **6**: 139-153.

Verhoeff, K.W., 1928. Isopoden aus Formosa. 39. Isopoden-Aufsatz. Mitt. zool. Mus. Berl., **12**: 200-226.

RECEIVED: 31 March 2001

ACCEPTED: 13 April 2001

泰國 코사무이와 코파응안의 *Burmoniscus*屬 陸棲 等脚類  
(Isopoda, Oniscidea, Philosciidae) 2新種

전 대 수 · 권 도 헌  
(인제대학교 생물학과)

요 약

泰國의 코사무이와 코파응안에서 採集된 *Burmoniscus*屬 陸棲 等脚類 2新種을 *B. siamenis*와 *B. phanganensis*로 命名하고 記載하였다. *B. siamenis*는 體色과 꼬리마디의 形態가 *B. mauritiensis* (Taiti and Ferrara, 1983)와 類似하나 제7가슴마디의 뒷모서리가 鈍角을 이루며 수컷의 제2배다리 안다리의 끝이 뾰족하다는 점 등이 다르다. *B. phanganensis*는 제7가슴마디와 꼬리마디의 形態가 *B. ocellatus* (Verhoeff, 1928)와 類似하나 수컷의 제1배다리 안다리에 2줄의 작은 돌기열이 있다는 점이 다르다.